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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,319	07/11/2003	Michael Robert Sameuls	AD6895USNA	4771

23906 7590 10/11/2005

E I DU PONT DE NEMOURS AND COMPANY  
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WILMINGTON, DE 19805

EXAMINER
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WU, SHEAN CHIU

ART UNIT	PAPER NUMBER
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1756

DATE MAILED: 10/11/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/618,319

Applicant(s)

SAMEULS ET AL.

Examiner

Shean C. Wu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-27 and 29-31 is/are rejected.
- 7) ☒ Claim(s) 28 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____.  |

### **DETAILED ACTION**

1. Applicant's request for reconsideration of the rejection of the last Office action is persuasive and, therefore, the previous action has been withdrawn. However, the new rejections based on the newly cited reference(s) follow. The rejections applied over the references cited in the previous office action differ from the present invention in that the present invention comprises additional repeat unit of the formula (II). The repeat unit of formula (II) has saturated or substituted saturated hydrocarbylene between two oxygen atoms. The saturated hydrocarbylene is meant a divalent radical of hydrocarbon in which there are no multiple (double or triple) bonds in the structure.

2. Claim 28 is objected to under 37 CFR 1.75(c) as being in improper form because a multiple dependent claim should refer to other claims in the alternative only. See MPEP § 608.01(n).

### ***Claim Rejections - 35 USC § 112***

3. Claims 7-8, 11 and 27 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In Claims 7-8 and 11, the formula (V) in the claim is vague because they are not described or defined in the claim.

In Claim 27, the claim language “apparatus is one or two quench rolls” does not have an antecedent basis.

4. Claim 23 contains the trademark/trade name Kraft paper, which Kraft paper has different thickness. Where a trademark or trade name is used in a claim as a limitation to identify or describe a particular material or product, the claim does not comply with the requirements of 35 U.S.C. 112, second paragraph. See *Ex parte Simpson*, 218 USPQ 1020 (Bd. App. 1982). The claim scope is uncertain since the trademark or trade name cannot be used properly to identify any particular material or product. A trademark or trade name is used to identify a source of goods, and not the goods themselves. Thus, a trademark or trade name does not identify or describe the goods associated with the trademark or trade name. In the present case, the trademark/trade name is used to identify/describe Kraft and, accordingly, the identification/description is indefinite.

***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1-6 and 8-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Umetsu et al. (US 5,804,634).

The reference discloses a liquid crystalline resin compound comprising liquid crystalline resin and inorganic filler, which the liquid crystalline resin being composed of about 99.5-50 wt % of partially aromatic liquid crystalline polyester resin and about 0.5-50 wt % of wholly aromatic liquid crystalline polyester resin. The reference resin compound is superior in flow ability and the molded article has good mechanical properties, especially balanced rigidity and toughness. The polyester resin contains an ethylene dioxy group in the molecular chain, and should more preferably be a copolymer composed of all of the following structural units (I), (II), (III), and (IV) on col. 2. The repeat unit (I) of the reference corresponds to the present formulae (IIIA) and (IIIB). The present formulae (II) and (V) encompass the reference formulae (III) and (II), respectively. Lastly, the present formula (I) corresponds to the reference formula (IV). All the repeat units (I), (II), (IIIA), (IIIB) and (V) of the present invention are disclosed by the reference. The reference further teaches that the partially aromatic liquid crystalline polyester resin is composed of said structural units (I), (II), (III), and (IV). Although these structural units may be contained in any ratio, it is desirable that the total amount of (I) and (II) being about 60-95 mol % of the total amount of (I), (II), and (III), the amount of (III) being about 40-5 mol % of the total amount of (I), (II), and (III), the molar ratio of (I)/(II) being from about 75/25 to 95/5 and the total amount of the structural units (II) and (III) is substantially equimolar with the amount of the structural unit (IV), which corresponds to present molar ratio of (II + V)/(I) and within the present claim. The liquid crystal resin compound of the reference has good flowability and gives molded products having good mechanical properties, especially balanced rigidity and

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toughness. It is useful as a molding material for three-dimensional products, sheets, containers, pipes, etc.

The reference differs the present invention in that the present invention has a specific range of formula V (corresponding to the reference formula (II)) and specific ratio of the formulae (I)/(IIIA + IIIB) (corresponding to (IV)/(I) of the reference). From the information disclosed by the reference, artisan can realize the reference formula (II)(corresponding to the present formula (V)) is minor component of the reference resin, which is within the claimed range of the present formula (V).

The molar ration of the present formulae (I)/(IIIA + IIIB) corresponds to the reference ratio (IV)/(I), which the ratio (IV)/(I) is converted to (II + III)/(I) because the units (II) + (III) is equimolar with (IV) form the reference teaching. From the data provided by the reference, the molar ratio of (I)/(II) being from about 75/25 (3/1) to 95/5 (19/1) plus the reference unit III is a minor component in the resin, therefore, one can derive the reference ratio of (II + III)/(I) being about (or less) 1/3~1/19, which is within the claimed ranges of the present molar ratio of (I)/(IIIA + IIIB) being about 1:1 to about 1:4.

With respect to ratio of the present (IIIA)/(IIIB), it also would be within the reference teaching because the reference formula (IV) encompasses the formulae (IIIA) and (IIIB). Therefore, it would have been obvious to those skilled in the art to utilize the reference teachings and optimize the concentration ranges of each component to arrive at the claimed invention.

With respect to process claims (claims 5-8), although the process of making the present liquid crystal polymer is not exemplified in the reference, it would have been obvious to those skilled in the art to follow by adding the structure unit (III) in the resin composed of structure units (I), (II) and (IV) or by adding the structure unit (II) in the resin composed of structure units (I), (III) and (IV) to arrive at the claimed invention (see col. 4, lines 5-42).

With respect to claims 4 and 9, the reference teaches that a hydroquinone can be added to the reference resin, which hydroquinone can act as a monomeric functional compound.

With respect to claim 21, the reference liquid crystal resin may optionally be incorporated with at least one olefin polymer, which is selected from polyethylene and polypropylene (also see reference claim 22).

With respect to claim 26, the reference liquid crystal resin can improve the molding shrinkage (col. 31, lines 5-63). Because the present liquid crystal polymer can be derived and modified from the reference, therefore, the reference resin will inherent the properties of the present invention.

It is noted that the present claims 22-24 (depending upon claim 17) contain additional function (bonded by lamination or extrusion) and material(s), however, claim 17 is claimed as a film or sheet, which comprises a liquid crystal polymer of claim 1. Therefore, these claims are rejected over the reference because they are claimed as a film, which can be derived from the reference. If applicants intend to claim the product or process thereof comprising additional material(s) beside the present liquid crystal

polymer, they should claim such to distinguish from claim 17 (i.e., claimed the present liquid crystal polymer and further comprising additional material(s)).

***Claim Rejections - 35 USC § 102***

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 27 and 29-31 are rejected under 35 U.S.C. 102(b) as anticipated by Furuta et al. (US 5,817,384).

The reference discloses a process for producing the laminated comprising heat-bonding a liquid crystal polyester resin composition film obtained by an inflation molding process with a paper layer, or heat-bonding the paper layer with a thermoplastic resin film, using a hot roll or a press machine. The reference further teaches that the process of coating a paper layer with a molten liquid crystal polyester resin composition by coextruding the liquid crystal polyester resin and thermoplastic resin, etc. (see col. 10, line 1-61, Table 1 and claim 1).

The reference also discloses that the multilayer structure comprising liquid crystal polyester may be a film or sheet that is sealed to itself to form a container or package of this invention. Therefore, the reference (inherently) anticipates the claimed invention.

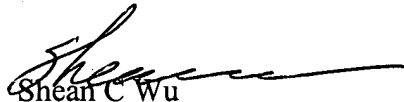


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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shean C. Wu whose telephone number is 571-272-1393. The examiner can normally be reached on 9:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

  
Shean C Wu  
Primary Examiner  
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SCW